

► **Practice**

Answers

1. 43.2 g
2. 8.0 g

Understanding Concepts

1. Calculate the mass of 1.60 mol of aluminum atoms.
2. Calculate the mass of 0.25 mol of sulfur atoms.

► **Practice**

Understanding Concepts

3. What amount of iron is in a 3.30-g iron nail?
4. What amount of silver is in a silver coin that contains 23.6 g of pure silver?
5. What amount of copper is in a bracelet that contains 7.65 g of pure copper?

Answers

3. 0.059 mol Fe
4. 0.219 mol Ag
5. 0.120 mol Cu

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Understanding Concepts

6. How many atoms of carbon are in a 3.30-g diamond (pure carbon)?
7. How many atoms of neon are in a neon sign that contains 6.80 g of neon?
8. How many atoms of mercury are in the bulb of a thermometer, if the mercury has a mass of 78.2 g?

Answers

6. 1.65×10^{23} C atoms
7. 2.03×10^{23} Ne atoms
8. 2.35×10^{23} Hg atoms

► **Practice**

Understanding Concepts

12. Calculate the mass of 0.900 mol of ammonia, $\text{NH}_3(\text{g})$.
13. Calculate the mass of 3.60 mol of freon-12, $\text{CCl}_2\text{F}_2(\text{g})$.

Answers

12. 15.3 g
13. 435 g

► **Practice**

Understanding Concepts

14. What amount of magnesium hydroxide, $\text{Mg}(\text{OH})_2(\text{s})$, is in 204.0 g of magnesium hydroxide?
15. What amount of sucrose (table sugar), $\text{C}_{12}\text{H}_{22}\text{O}_{11}(\text{s})$, is in a bag that contains 1.00 kg of sucrose?

Answers

14. 3.497 mol
15. 2.92 mol

► **Practice**

Understanding Concepts

16. How many molecules of water are in a bottle that contains 250.0 g of water?
17. How many formula units of cobalt(III) dichromate, $\text{Co}_2(\text{Cr}_2\text{O}_7)_3(\text{s})$, are in a 3.30-kg sample?

Answers

16. 8.35×10^{24} molecules
17. 2.59×10^{24} formula units

► **Practice**

Understanding Concepts

18. How many atoms of fluorine are in 4.4 g of fluorine gas?
19. How many atoms of nitrogen are in 1.26 kg of nitrogen gas?
20. How many atoms of hydrogen are in 29.5 g of ethene, $\text{C}_2\text{H}_4(\text{g})$?
21. How many atoms of oxygen are in 0.170 mg of strontium hydroxide, $\text{Sr}(\text{OH})_2(\text{s})$?

Answers

18. 1.4×10^{23} F atoms
19. 5.41×10^{25} N atoms
20. 2.53×10^{24} H atoms
21. 1.68×10^{18} O atoms